Region IV

U.S. ENVIRONMENTAL PROTECTION AGENCY

EXPLANATION OF SIGNIFICANT DIFFERENCES

HOWE VALLEY LANDFILL SUPERFUND SITE HARDIN COUNTY, KENTUCKY

MARCH 1993

INTRODUCTION

The Howe Valley Landfill Superfund Site (the "Site"), is located in Hardin County, West of Elizabethtown, Kentucky (See Figure 1). The purpose of this document is to provide additional information on the selected remedy for the Site described in a Record of Decision (ROD) issued on Sept. 28, 1990.

This Explanation of Significant Differences (ESD) is being issued by the U.S. Environmental Protection Agency (EPA), the lead agency for Site activities, and the Kentucky Natural Resources and Environmental Protection Cabinet (KNREPC), the support agency for this response action. This document is issued as part of the public participation responsibilities under Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. Section 300.435(c)(2)(1). An ESD is published when the differences in a remedial or enforcement action, settlement, or consent decree significantly change but do not fundamentally alter the remedy selected in the ROD with respect to scope, performance, or cost.

This notice includes information on activities that were not detailed in the ROD, and/or are being modified from the ROD. The Administrative Record contains the information upon which the ROD was based. This ESD and supporting documentation will become a part of that Administrative Record which is located in the following places:

Information Repository	EPA Region IV Office
Hardin Cty. Public Library	Superfund Records Ctr.
201 West Dixie Highway	345 Courtland Street, NE
Elizabethtown, KY 42701	Atlanta, GA 30365
Tel. (502) 769-6337	Tel. (404) 347-0506

SUMMARY OF SITE HISTORY, CONTAMINATION PROBLEMS, AND SELECTED REMEDY

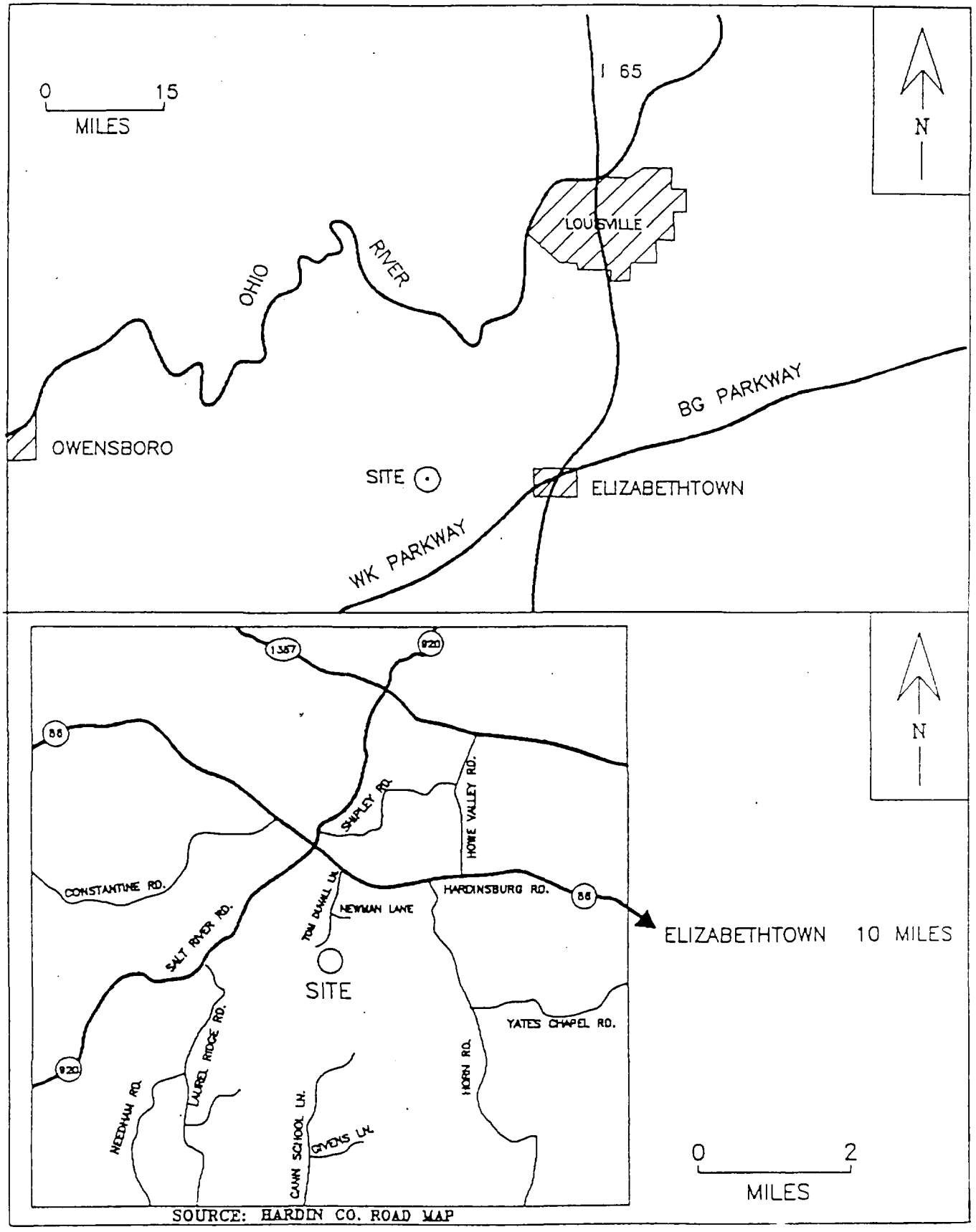
Site History and Contamination Problems

The sparsely vegetated, eleven (11) acre Howe Valley Landfill Site is situated at the end of Tom Duvall Lane, approximately 1.4 miles south of State Road 86 within the Towns of Cecilia and Vertrees, Kentucky. The nearest community is the unincorporated area of Howe Valley.

Beginning in 1967, Kentucky Industrial Services, Inc. (KIS) used the Howe Valley Site as an industrial waste landfill. In 1972, the Commonwealth of Kentucky passed a law requiring operating permits for solid waste landfills. The KNREPC's Division of Waste Management granted a permit allowing KIS to continue accepting solid wastes but not hazardous wastes. The landfill operated under the State-issued solid waste permit until June 1976, when the Site officially closed.

In response to a 1980 Federal mandate requiring States to identify open dumps, the KNREPC conducted a site inspection of the Howe Valley Landfill and found that wastes being released from the Site into the underlying karst terrain could potentially migrate to Linders Creek and infiltrate the Green River Drainage Basin.

FIGURE 1 - SITE LOCATION MAP



SOURCE: HARDIN CO. ROAD MAP

KARST TERRAIN is land that consists of rolling terrain underlain by limestone and marked by depressions or sinkholes that form as the limestone weathers. Irregular underground paths, which form when limestone dissolves, make it difficult to predict where and how fast water will travel underground. Groundwater in karst terrain can travel at a rate of several hundred feet per day.

Upon the State's request, EPA conducted a Preliminary Assessment (PA) and Site Investigation (SI). Results confirmed that water flowed towards Linders Creek and that between 2,000 to 5,000 drums were buried at the landfill. The Site was proposed for inclusion on the National Priorities List (NPL) in June 1986 and finalized in July 1987.

Under an Administrative Order between EPA and two of the Potentially Responsible Parties (PRPs) for the Site, the PRPs' contractor conducted a Removal and a Remedial Investigation (RI). The Removal, conducted in the Summer of 1988, involved the excavation of a total of 9,150 full or partially filled drums, 1,621 empty drums, 6,000 small containers and 3,000 cubic yards of non-containerized waste.

All wastes and highly contaminated soils were sent off-site for permanent disposal at a Resource Conservation and Recovery Act (RCRA) approved landfill. Water in an on-site pond was treated with a portable water filtration unit containing activated carbon. After the filtered water was tested and found to be clean, it was used for dust suppression and equipment cleaning.

Samples collected during the Removal indicated that contamination was dispersed in several distinct areas of the Site. The outer area of the Site predominantly contained metal bearing sludges while the central area predominantly contained volatile organic bearing waste. As a part of the Removal, to address some of the soil contamination, soils from the central area of the Site were spread out and roto-tilled to promote volatilization of the organic contaminants.

In September 1988, to define groundwater flow patterns during drought conditions, a dye-trace study was conducted. Results indicated that water entering the on-site sinkhole traveled to Boutwell Spring, approximately 1.85 miles south of the Site at a rate of 290 feet per day. Samples collected at Boutwell Spring showed traces of the same contaminants that were known to be at the Site.

In January 1989, a draft RI report and draft Feasibility Study (FS) report were submitted to EPA for review and approval. Information in the reports was incomplete and inconclusive; therefore, EPA was unable to issue a decision. In response to the reports, EPA submitted comments to the PRPs. In order to eliminate data gaps in the reports, EPA requested that the PRPs have their contractor conduct additional investigations so a final Site remedy could be selected.

Post-removal/post-aeration sampling was conducted in March 1990 to locate and assess the levels of contamination still remaining on or off-site. The findings of the supplemental sampling indicated that contamination remained in the on-site subsurface soils, primarily in the central area and an outlying area containing metals.

Since the first dye-trace study was carried out during extremely low flow conditions, it was decided by EPA, the PRPs and the U.S. Geological Survey (USGS), that a second dye-trace should be conducted under maximum flow conditions. In January 1990, the additional trace confirmed that water entering the on-site sinkhole flowed directly to Boutwell Spring, but this time at a rate of approximately 10,000 feet per day. Water samples collected in March 1990 from the spring did not show any contamination above the EPA's Drinking Water Standards.

The chemicals listed below represent contaminants related to the Site that were detected above background in March 1990:

Inorganics:	Chromium Zinc Copper Cyanide
Organics:	1,2-dichloroethene (1,2-DCE) 1,1-dichloroethane (1,1-DCA) 1,1,1-trichloroethane (1,1,1-TCA) tetrachloroethene (PCE) trichloroethene (TCE)
Base/Neutral Extractables:	di-n-butyl phthalate

Upon review of the data collected during the additional investigations, two areas of concern were identified at the Site. The first area includes the soils in the outer area of the Site known to still contain metals, primarily chromium. The second area includes the soils from the central area of the Site that contain significant levels of organics, especially tetrachloroethene (PCE). In both these areas, the contaminants are located within the near-surface (1 to 2 feet deep) or subsurface (3 to 9 feet deep) of the Site.

Selected Remedy

On September 28, 1990, EPA issued a Record of Decision for the Site which selected a remedy for the contaminated soil that remained. The major remedy components selected for the Site consisted of excavation and off-site disposal of the outer area and treatment of contaminated soil from central area.

The outer area soils will be transported to an off-site RCRA approved landfill. Central area soils will be excavated and placed next to the excavated trenches in 1-foot high lifts. The soil will be mechanically mixed to break up dirt clumps and promote volatilization of the organics. Periodic sampling of soil will be conducted to ensure that cleanup criteria are being met. Additionally, air monitoring for particulates and volatile organics will be conducted along the Site boundary. During aeration activities, stormwater run-on/run-off will be collected in ditches along the perimeter of the landfill. Once organic contaminants are within the acceptable concentrations , the remediated soil will be placed back in the central area. Clean fill will be placed in the outer areas to replace those excavated soils. Upon completion, the excavated areas will be graded, covered with top soil and seeded to restore the vegetative cover.

Groundwater will be monitored at Boutwell Spring and any current or future wells installed along the route between Boutwell Spring and the Site. Deed restrictions will limit and/or prohibit the use of both the property and on-site surface and groundwater supplies.

Following issuance of the ROD in September 1990, EPA issued Special Notice Letters to the PRPs requesting their voluntary participation to implement and finance the selected remedy in the ROD. Issuance of the Special Notice Letters involved a 60-day moratorium (a suspension of activity) in which the PRPs were provided the opportunity to submit to the Agency a good faith offer to implement the selected remedy. A good faith offer was received from Dow Corning Corporation (Dow). Formal negotiations continued with the PRPs and an agreement between EPA and Dow, for Dow to conduct the final clean-up, was entered in the United States District Court on May 22, 1991.

DESCRIPTION OF SIGNIFICANT DIFFERENCES AND BASIS FOR THE DIFFERENCES

In fall of 1992, while performing the final clean-up, more buried drums and an organic liquid in the soil were discovered. In response to this discovery, Dow conducted a thorough search of the Site using two different drum locating instruments and identified several areas that appeared to contain buried drums. These areas were excavated on November 4 and 5, 1992, and all remaining buried drums that were found were removed. The buried drums uncovered and removed include: 170 intact 55 gallon drums; one intact 35 gallon drum; 15 five gallon buckets; and two 1 gallon containers.

The organic liquid in the soil was discovered in the central area away from where any of the buried drums were found. The source and quantity of this liquid is unknown at this time, but will be investigated during completion of the soil clean-up being conducted.

During the excavation of the area where the organic liquid was discovered, a number of heavy rainfalls unexpectedly occurred at the Site. These rainfalls caused the excavated areas to fill with water.

Due to these unexpected events, EPA is modifying the remedial action to address the additional contamination. A description of the significant differences between the remedy as presented in the ROD and the current remedial action is summarized in Table 1.

The drums, buckets and containers were contained and prepared for shipment to a Federally approved hazardous waste disposal facility. These wastes are currently being analyzed. They will be disposed off-site once approval is received from the disposal facility.

The soil containing the organic liquid will be investigated and quantified. Upon determining the extent of the liquid in the soil, a clean-up plan will be developed and implemented. If the clean-up plan requires a technology other than off-site disposal or soil aeration, the public will be notified and invited to comment on the new clean-up plan. The soil clean-up standards have not changed from the standards established in the 1990 ROD.

The contaminated rainwater collected in the excavated areas will be treated using a temporary carbon treatment system that will operate as necessary until the Site has been remediated. The rainwater will be removed and treated using an activated carbon filter system and possible aeration. The water will be tested before and after treatment to ensure that the system is functioning properly. Prior to discharge to a percolation and evaporation area on an uncontaminated part of the property, the water will be treated to meet Maximum Contaminant Levels (MCLs) or Safe Drinking Water Act Standards for the identified contaminants. None of the treated water will be discharged or allowed to migrate beyond the property boundaries.

TABLE 1

ORIGINAL REMEDY	MODIFIED REMEDY ADDITIONS
Excavation of inorganic (metals) contaminated soil and disposal in an off-site regulated disposal facility.	Removal of additional drums and contaminated soil found and disposal in an off-site regulated disposal facility.
Excavation of volatile organic contaminated soil and contaminant reduction through soil aeration.	Identification of soils containing organic liquid and development of a clean-up plan.
Routing of all rainwater runoff except that falling directly on the contaminated areas into holding ponds to allow for evaporation.	Treatment of contaminated rainwater using an activated carbon filter and possible aeration and discharging the treated water to a percolation and evaporation area within the Site boundary.

Additional information regarding the significant differences and the basis for such differences is contained in the Administrative Record.

SUPPORT AGENCY COMMENTS

As the support agency for this response action, the Kentucky Natural Resources and Environmental Protection Cabinet (KNREPC) has reviewed the information contained in this ESD and concurs with the changes made to the selected remedy.

AFFIRMATION OF THE STATUTORY DETERMINATIONS

Considering the new information that has been developed and the modifications that have been made to the selected remedy, the EPA and the Commonwealth of Kentucky believe that the remedy, as set forth in the ROD and modified by this ESD, remains protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to this remedial action, and is cost effective.

In addition, the modified remedy utilizes permanent solutions and alternative treatment (or resource recovery technologies) to the maximum extent practicable for this Site.

PUBLIC PARTICIPATION ACTIVITIES

This ESD along with notice in a major local newspaper provides public notice of the ESD, including the reasons for such differences.

Supporting information is included in the Administrative Record and is available for public review. Comments or questions on this issue should be mailed to Felicia Barnett at the address shown below. For further information contact Felicia Barnett, Remedial Project Manager, or Suzanne Durham, Community Relations Coordinator, 1-800-435-9233 or at the following address:

U.S. Environmental Protection Agency
Waste Management Division
North Superfund Remedial Branch
Kentucky/Tennessee Section
345 Courtland Street, N.E.
Atlanta, GA 30365.

Patrick M Tobin

Patrick Tobin
Acting Regional Administrator
Region IV

February 25, 1993
DATE

U.S. Environmental Protection Agency
345 Courtland Street, N.E.
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North Superfund Remedial Branch
Suzanne Durham, Community Relations Coord.
Felicia Barnett, Remedial Project Manager

Region 4

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